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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,247	03/26/2001	Keith E. Mostov	18062E-000910US	1580

20350 7590 05/03/2004

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EXAMINER	
BELYAVSKYI, MICHAIL A	

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/818,247	MOSTOV ET AL.	
	Examiner	Art Unit	
	Michail A Belyavskyi	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) *See Continuation Sheet* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 10-13 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 1-7,10-13,15-20,23,24,26-36,39,41-48,50,51,53-70,73,75-84,87 and 89-93.
Continuation of Disposition of Claims: Claims withdrawn from consideration are 16-20,23,24,26-36,39,41-48,50,51,53-70,73,75-84,87 and 89-93.

RESPONSE TO APPLICANT'S AMENDMENT

1. Applicant's amendment, filed 03/29/04 is acknowledged.

Claims 1-7, 10-13, 15-20, 23, 24,26-36, 39, 41-48, 50, 51, 53-70, 73, 75-84, 87, 89 and 90-93 are pending.

2. Claims 16-20, 23, 24, 26-36, 39, 41-48, 50, 51, 53-70, 73, 75-84, 87, and 89-93 stand withdrawn from further consideration by the Examiner, 37 C.F.R. § 1.142(b) as being drawn to nonelected inventions.

Claims 1-7, 10-13 and 15, drawn to an antibody or peptide ligand that binds specifically to a region of a pIgR and does not bind to the stalk of said pIgR and further comprising a biological active component under consideration in the instant application.

In view of the amendment, filed 03/29/04 the following rejections remain:

3. The following is a quotation of the second paragraph of 35 U.S.C. 112.

> *The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.*

4. Claims 1-7, 10-13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite and ambiguous in the recitation of " binds to most abundant form of SC present in the organ" and " does not binds to the stalk under physiological conditions". The characteristics and metes and bounds of " most abundant form of SC present in the organ" and "physiological conditions" are unclear and indefinite.

Applicant's asserts that detailed teaching set forth in the specification, coupled with the assays set forth in the Examples , permit the practitioner to readily determine whether any particular ligand falls within the scope of the claims.

Contrary to Applicant's assertion is it the Examiner position that the characteristics and metes and bounds of " most abundant form of SC present in the organ" and "physiological conditions" are unclear and indefinite. Moreover, Applicant himself acknowledge that " most abundant forms of SC may vary accordingly to physiological conditions" (see page 42, lines 10-15 in particular). It is unclear which forms are most abundant since specification further disclosed that most abundant form in a particular physiological conditions has to be determined individually for each conditions (see page 42, lines 10-30 in particular).

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-4, 10-13 and 15 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a antibodies that binds specifically to a B-region of pIgR, and does not bind to secretory component of pIgR and does not bind to the stalk of said pIgR and a chimeric molecule comprised said antibody coupled to a biologically active component, wherein biological active component is a nucleic acid encoding the wildtype cystic fibrosis transmembrane conductance regulator, does not reasonably provide enablement for *any* antibody or any peptide ligand that binds to *any* region of pIgR and does not bind to secretory component of pIgR and does not bind to the stalk of said pIgR . The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims for the same reasons set forth in the previous Office Action, mailed 09/23/03.

Applicant's arguments, filed 03/29/04 have been fully considered, but have not been found convincing.

Applicant asserts that : (i) claim 1 does not recite ligands that binds to any portion of pIgR , but rather ligands that bind to a region of pIgR positioned between the most abundant form of the Sc and the stalk- what the specification terms the "B region"; (ii) person of skill were enabled to screening and finding ligands for binding to any portion of pIgR prior to the filing of the present specification. The sequence of the pIgR was known and standard techniques were available in the art for identifying and screening peptides, antibodies and other molecules that binds to any particular target of interest; (iii) Declaration by Dr. Glynn states that person of skill in the art were well aware before the priority date of the application of the capability of phage display to rapidly screen libraries of peptides to identify peptides that binds to any particular target of choice and there are companies that provide such screening.

It is noted that Applicant's comments that " claim 1 does not recite ligands that binds to any portion of pIgR , but rather ligands that bind to a region of pIgR positioned between the most abundant form of the Sc and the stalk- what the specification terms the "B region" supports the enablement rejection under first paragraph of 35 U.S.C. 112 . In other words Applicant himself acknowledge, that claimed antibody or peptide ligand has to bind to very specific region of pIgR, that is 'B region". It is noted however, that there is no recitation of said region in the instant claim 1. It is the Examiner position that the instant claim 1 reads on an antibody or peptide ligand that binds to *any* region of a pIgR.

With regards to Applicant's comments that "the sequence of the pIgR was known and standard techniques were available in the art for identifying and screening peptides, antibodies and other molecules that binds to any particular target of interest" and that Declaration by Dr. Glynn shows that art recognized techniques available to screen and identified peptides that can bind to any regions of pIgR.

Contrary to Applicant's assertion the issue raised in he previous Office Action was that there is insufficient guidance and direction as to how to make *any* antibody or peptide ligand to *any* region of pIgR or *any* ligand comprising a binding component for binding to *any* region of pIgG and *any* biological active component . The Specification as filed on page 37, lines 7-15 disclosed that "ligand" can be "all molecules capable of specifically binding to B region of pIgG and that such ligands includes peptides or small organic molecules or nucleic acids. Moreover, Applicant himself acknowledge that it is essential for the invention that antibodies should bind specifically only to B region (not any region) of the pIgR, the region of the SC adjacent to the cleavages site which undergoes further proteolytic digestion or secondary cleavage following from intact pIgR (see page 13, lines 5-30 in particular).
Applicant has not provided sufficient biochemical information (e.g. structural characteristics, amino acid composition , physicochemical properties, etc) that distinctly identifies such "ligands" and "any biological active components" other than antibodies that binds specifically to B region of pIgG . The claims as written encompass a broad genus of an antibody or peptide ligan with an unlimited number of possibilities with regard to the length of the polypeptide sequence. Further, the enablement issues of making the protein still remain because the specification does not teach and provide sufficient guidance as to which amino acid of any antibody or peptide ligand would have been altered such that the resultant polypeptide would have retained the function, i.e. binding specifically only to B region of pIgR. The Declaration by Dr. Glynn simply stated that person of skill in the art were well aware before the priority date of the application of the capability of phage display to rapidly screen libraries of peptides to identify peptides that binds to any particular target of choice and there are companies that provide such screening.

Since the instant fact pattern fails to indicate that representative number of structurally related compounds is disclosed, the artisan would not know the identity of a reasonable number of representative compounds falling within the scope of the instant claims and consequently would

not know how to make them. An assay for *finding* a product is not equivalent to a positive recitation of *how to make* a product.

Consequently, without additional guidance in the specification, and the dearth of information in the art, for one of skill in the art to practice the invention as claimed, would require experimentation that is excessive and undue. The amount of guidance or direction needed to enable an invention is inversely related to the mount of knowledge in the state of the art as well as the predictability in the art (In re Fisher, 427 F.2d 833, 839, 166 USPQ 18,24 (CCPA 1970)).

Thus, Applicant has not provided sufficient guidance to enable one skill in the art to use claimed any antibody or peptide ligand that binds to any region of pIgR or any ligand comprising a binding component for binding to any region of pIgG and any biological active component in manner reasonably correlated with the scope of the claims. The scope of the claims must bear a reasonable correlation with the scope of enablement. In re Fisher, 166 USPQ 18(CCPA 1970) indicates that the more unpredictable an area is, the more specific enablement is necessary i*n order to satisfy the statute.* In view of the quantity of experimentation necessary, the unpredictability of the art, the lack of sufficient guidance in the specification, the limited working examples, and the limited amount of direction provided given the breadth of the claims, it would take undue trials and errors to practice the claimed invention.

7. Claims 1-4, 10-13 and 15 stand rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for the same reasons set forth in the previous Office Action, mailed 09/23/03.

Applicant's arguments, filed 03/29/04 have been fully considered, but have not been found convincing.

Applicant is in possession of : a antibodies that binds specifically to a B-region of pIgR, and does not bind to secretory component of pIgR and does not bind to the stalk of said pIgR and a molecule comprised said antibody coupled to a biologically active component, wherein biological active component is a nucleic acid encoding the wildtype cystic fibrosis transmembrane conductance regulator .

Applicant is not in possession of : *any* ligand that binds to *any* region of pIgR or *any* ligand comprising a binding component for binding to *any* region of pIgG and *any* biological active component .

Applicant asserts that the rejection is based in part on ignoring two functional recitations regarding where the ligands of the invention binds, which define the ligands as binding to the B region and misreading of the claims to contend that the ligand binds to both to pIgR and biological active compound.

Contrary to Applicant's assertion, it is noted that the amended claims do not recited an antibody or peptide ligand that binds to B region of pIgR. The claims broadly recited an antibody or peptide ligand that binds specifically to a region of pIgG. Moreover, a description of a protein by functional language in the absence of a structure is not considered sufficient to show possession of the claimed invention. A description of what a material does rather than of what it is, usually does not suffice. See Fiers, 984 F.2d at 1169-71, 25 USPQ2D at 1605-06. It is only a definition of a useful result rather than a definition of what achieves that result. Many species may achieve that result. The definition requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See *In re Wilder*, 736 /f.2d 1516, 1521, 22 USPQ 369, 372-73 (Fed. Cir. 1984) affirming the rejection because the specification does "little more than outline[e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate.")

Accordingly, naming a type of material generally known to exist, in the absence of knowledge as to what the material consists of (e.g. structural feature), is not a description of that material.

With regards to Applicant's comments of misreading of the claims to contend that the ligand binds to both to pIgR and biological active compound.

Contrary to Applicant's assertion in the previous Office Action there was no indication that the ligand binds to both pIgR and biological active compound. The examiner interpreted claim 11 as a molecule in which there is a linkage of biological active component to an antibody or peptide ligand.

However, as was stated in the previous Office Action the claimed invention is drawn to a genuses of "ligands" and "biologically active components", however, structural identifying characteristics of the genuses are not disclosed. There is no evidence that there is any *per se* structure/function relationship between the disclosed: (i) antibody that binds specifically to a B-region of pIgR, and does not bind to secretory component of pIgR and does not bind to the stalk of said pIgR and (ii) a molecule comprised said antibody coupled to a biologically active component, wherein biological active component is a nucleic acid encoding the wildtype cystic fibrosis transmembrane conductance regulator and *any* antibody or peptide ligand that binds to *any* region of pIgR or *any* antibody or peptide ligand comprising a binding component for binding to *any* region of pIgG and *any* biological active component.

Applicant has disclosed a limited number of species; therefore, the skilled artisan cannot envision all the contemplated possibilities of the *any* ligand that binds to *any* region of pIgR and any biological active components recited in the instant claims. Consequently, conception in either case cannot be achieved until a representative description of the structural and functional properties of the claimed invention has occurred, regardless of the complexity or simplicity of

the method. Adequate written description requires more than a mere statement that it is part of the invention. The sequences themselves are required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993).

A description of a genus of ligands may be achieved by means of a recitation of a representative number of ligands, defined by amino acid sequence, falling within the scope of the genus, or of a recitation of structural features common to the genus, which features constitute a substantial portion of the genus. Regents of the University of California v. Eli Lilly&Co., 119F3d 1559, 1569, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997).

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the written description inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.). Consequently, Applicant was not in possession of the instant claimed invention. See University of California v. Eli Lilly and Co. 43 USPQ2d 1398.

Applicant is directed to the Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

8. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michail Belyavskyi whose telephone number is 571/ 272-0840 The examiner can normally be reached Monday through Friday from 9:00 AM to 5:30 PM. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on 571/ 272-0841 .

The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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